

October 1964

LOP NOR

Lop Nor a large lake, which fluctuates greatly in size, is located in the eastern apex of the arid Tarim Basin of Sinkiang Province, and unlike most salt desert lakes, is predominantly fresh water. The lake dominates the small basin known as the Lop Desert, which is approximately 80 miles north-south and 150 miles east-west and lies 2,600 feet above sea level. Mountains rise to the north and to the south, low hills to the east, and to the west, beyond the old course of the Tarim River, stretches the vast Takla Makan Desert.

Lop Nor has appeared in literature and explorers' records since the times of Marco Polo. Lou-lan, an ancient city and caravan site on the old Silk Road to China, was located near the lake, but it had been abandoned and lost to the sands several centuries ago (Photo No. 1). Sven Hedin, the noted Swedish explorer, called Lop Nor the "Wandering Lake," and in 1930 he headed an expedition down the Konche Darya, a tributary of the Tarim River and the current source of the lake, to determine its present size, shape, and precise location. Lop Nor has also excited the curiosity of Russian explorers. N. M. Przheval'skiy traversed the Lop Nor area in 1876 and more recently, in the mid 1950's, two geographers from the USSR visited the lake.

Lop Nor is a rare phenomenon in nature: a nomadic body of water. Its shifting is due to the peculiarities of the unstable regimen of the Tarim River and its tributaries which feed Lop Nor. The shallow stream beds frequently meander off to one side and create new lakes in any desert hollow they may encounter. In 1921 the Konche Darya re-entered an old channel along the base of the Kuru Tagh and spilled its waters out over the flat northern portion of the Lop Desert, resulting in the present location of the lake.

The size and shape of the lake also vary with the season. In summer, the whole northern half of the lake may dry up completely, or ⁱⁿ the water may remain only/the deeper parts of the lake, creating two smaller bodies of water. Lop Nor, however, is not deep. Depths in the southern portion of the lake can reach 15 feet, but according to Hedin, depths in the northern portion can be as shallow as 6 inches to 1 foot. The rate of evaporation in the dry desert air can reach 3 feet a month. The shorelines of Lop Nor are shelving and shallow; a fall of less than 20 inches in water level can uncover as much as 3 miles of ground. The evaporation process leaves a salt-encrusted residue called shor (Photo No. 2) that dries, shrivels, cracks, and solidifies to the hardness of brick, resembling a frozen ploughed field.

With the exception of a few reeds and tamarisk bushes that spring up along the banks of the lake and the river that feeds it, the landscape appears grey and lifeless to the naked eye, with tinges of

yellow and occasional reddish-yellows in the sands and clays. Waterfowl nest in the reeds, but larger forms of animal life are limited to occasional wild pigs, antelope, and wild camels.

The major natural force is the wind -- the strong prevailing northeasterly wind which is instrumental in creating to the east and west of Lop Nor some of the most desolate wastelands in Central Asia. Seasonally, most often in spring and early summer, these winds can attain gale velocities causing dust storms and sandstorms. The wind sweeps down over the hills and mountains, scouring out hollows in the dry surfaces. The sharp abrasive edges of the particles of sand can quickly etch out shapes in the clay deposits to the northeast of the lake, creating an unusual topographic feature called yardang (Photo No. 3). The yardang is composed of long undulating ridges with almost perpendicular banks 10-20 feet high that are separated by deep corridors, all aligned northeast-southwest with the direction of the wind.

To the east of Lop Nor is the Gashun Gobi, one of the most inhospitable of the world's desert areas. The surface of the ground here is composed of easily eroded greyish-yellow fine sand, powdered sand, mixtures of sand and clay -- all old river and lake deposits. Wind-eroded hollows are 12-25 feet deep, 30-90 feet long, and 30-60 feet wide. Mounds rise 12-25 feet above the level of the ground. These dunes are completely bare and move at the whim of the wind.

To the west of Lop Nor sand hills dot the desert plain between the lake and the old course of the Tarim River, which forms a dividing line between the Lop Desert and the larger Takla Makan Desert to the west. It is an ocean of sand with crests and swells slowly moving with the prevailing winds. The dunes are crescent shaped, 10-15 feet high with the crests 90-150 feet apart. Heights of crests, downwind toward the southwest, increase to 25-30 feet and occasionally are as high as 75 feet.

North of Lop Nor, and between the course of the Konche Darya and along the mountain slopes of the Kuru Tagh are areas of gravel wash called sai. Low brush appears near a few salt springs (Photo No. 4) and ephemeral water courses.

Summers in the Lop Desert are dry and hot; winters are dry and cold. Rainfall is negligible -- less than 1 inch per year. Unlike the deserts in the southwestern United States, the desert never "blooms" after a brief shower. The meager precipitation in the Lop Desert occurs in late winter when temperatures are too low to permit plant growth. Temperatures are below freezing from December through February; during this period the water in Lop Nor and in the Konche Darya is frozen. The period of March, April, and May reflects the highest incidence of cloudy weather, the highest winds -- which frequently reach gale velocity, the largest number of dust storms and sandstorms, and in general the most inclement weather. Rising spring temperatures bring the melting mountain waters to the Konche Darya,

UNCLASSIFIED

Approved For Release 2003/10/15 : CIA-RDP79T01019A000200360001-9

where normally the highwater level is reached in July and August. Lop Nor, however, usually doesn't reach its highest level until October. Daily temperature variations in the summer season are large; daytime temperatures are above 90°F, and nighttime temperatures fall to 50-60°F. Fall is bright and clear; winds are lower, and few storms occur in the autumn months.

The Lop Nor area is almost uninhabited. The desert wastes support little life. A few nomads may range along the banks of water courses from time to time, or fish in the lake, but their numbers are negligible. The wastes are left to the winds, the sands, and the sun.

Approved For Release 2003/10/15 : CIA-RDP79T01019A000200360001-9

UNCLASSIFIED

25X1

Approved For Release 2003/10/15 : CIA-RDP79T01019A000200360001-9

Next 1 Page(s) In Document Exempt

Approved For Release 2003/10/15 : CIA-RDP79T01019A000200360001-9